

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION
ATTORNEY DOCKET NO. 200400352-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Parthasarathy Ranganathan et al.

Confirmation No.: TBD

Application No.: TBD

Examiner: TBD

Filing Date: Herewith

Group Art Unit: TBD

Title: OPTIMIZING LIFETIME OF A DISPLAY

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before
mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97 (c) together with either a:
☐ Statement under 37 CFR 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97 (d) together with a:
☐ Statement under 37 CFR 1.97(e)(1) or (2), and
☐ a \$180.00 fee set forth in 37 CFR 1.17(p).
(Filed after final action, a notice of allowance, on or before payment of the issue fee)

Please charge to Deposit Account **08-2025** the sum of \$0.00. At any time during the
pendency of this application, please charge any fees required or credit any overpayment to Deposit
Account **08-2025** pursuant to 37 CFR 1.25.

☒ Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Statement together with
any required copies of patents, publications or other information of which applicant(s) are aware, which
applicant(s) believe(s) may be material to the examination of this application and for which there may be
a duty to disclose in accordance with 37 CFR 1.56.

☐ A concise explanation of the relevance of foreign language patents, foreign language publications
and other foreign language information listed on PTO Form 1449, as presently understood by the
individual(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the
attached sheet, or where a foreign language patent is cited in a search report or other action by a
foreign patent office in a counterpart foreign application, an English language version of the search
report or action which indicates the degree of relevance found by the foreign office is listed on form PTO
1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

- ☐ I hereby certify that this correspondence is being
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Respectfully submitted,

Parthasarathy Ranganathan et al.

By 

Ashok K. Mannava

Attorney/Agent for Applicant(s)
Reg. No. 45,301

Date: April 23, 2004

FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY. DOCKET NO.	APPLICATION NO.	CONFIRMATION NO.
	200400352-1		
	APPLICANT		
	Parthasarathy Ranganathan		
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	Herewith		

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
NK/	1A 2003/0135288	July 17, 2003	Ranganathan et al.	
NK/	1B 2003/0156074	Aug. 21, 2003	Ranganathan et al.	
NK/	1C 6,456,016	Sept. 24, 2002	Sundahl et al.	
	1D			
	1E			
	1F			
	1G			
	1H			
	1I			
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	1K			

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	PUBLICATION DATE	NAME OF PATENTEE OR APPLICANT	Pages/Columns/Lines Where Relevant Passages/Figures Appear	Check if Translation attached
	1L				
	1M				
	1N				
	1O				
	1P				

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

NK/	1Q	Bloom, L. et al., "Investigating the Relationship Between Battery Life and User Acceptance of Dynamic, Energy-Aware Interfaces on Handhelds", Hewlett Packard Technical Report, Downloaded from the Internet on 4/22/04.
NK/	1R	Choi, I. et al., "Low-Power Color TFT LCD Display for Hand-Held Embedded Systems", August 2002.
NK/	1S	Draffan, E.A. et al., "Colour and Contrast Accessibility Issues: For the Design of E-Learning Materials", May 2003.

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NK/	1Q	eTForecasts, "Worldwide PDA & Smartphone Forecast 1998-2008", June 2003.
NK/	1R	Flinn, J. et al., "Energy-Aware Adaptation for Mobile Application", 1999.
NK/	1S	Geelhoed, E. et al., "Energy-Aware User Interfaces and Energy-Adaptive Displays: Improving Battery Lifetimes in Mobile Devices", Proceedings of HP TechCon, June 2004; Downloaded from the Internet on 4/22/04.

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NK/	1Q	Harter, T. et al., "Energy-Aware User Interfaces: An Evaluation of User Acceptance", Proceedings of the Annual Conference on Human Factors in Computing Systems, 2004; Downloaded from the Internet on 4/22/04.
NK/	1R	Harter, T. et al., "The Potential for Energy-Aware User Interfaces on Handheld Devices", November 2003.
NK/	1S	Iyer, S. et al., "Energy-Aware Display System Designs for Future Mobile Environments", ACM Press, 2003.

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NK/	1Q	Kamijoh, N. et al., "Energy Trade-Offs in the IBM Wristwatch Computer", IBM Research Division, October 2001. Abstract.
NK/	1R	Pering, T. et al., "The Simulation and Evaluation of Dynamic Voltage Scaling Algorithms", ACM ISBN August 2000.
NK/	1S	Richardson, T. et al., "Virtual Network Computing", IEEE Internet Computing, Jan/Feb 1998.

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NK/	1Q	Udani, S. et al., "The Power Broker: Intelligent Power Management for Mobile Computer", Dept of Computer Information Science, University of Pennsylvania, 1996.
NK/	1R	Viredaz, M. et al., "Energy Management on Handheld Devices", ACM Press, 2003.
NK/	1S	Viredaz, M. et al., "Power Evaluation of a Handheld Computer", IEEE Micro, 2003.

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	1P				

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

/VK/	1Q	Xiong, S. et al., "A Simple and Flexible Driver for OLED", ASID, 1999. Abstract.
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